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# Monsanto MATERIAL SAFETY DATA

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MONSANTO PRODUCT NAME

**SKYDROL® 500B-4 FIRE  
RESISTANT HYDRAULIC FLUID**

MONSANTO COMPANY  
800 N. LINDBERGH BLVD.  
ST. LOUIS, MO 63167

**Emergency Phone No.  
(Call Collect)  
314-694-1000**

## PRODUCT IDENTIFICATION

SKYDROL® fire resistant hydraulic fluids are proprietary formulations and are not identified by CAS numbers. All components of SKYDROL fluids appear on the Inventory of Chemical Substances published by the U.S. Environmental Protection Agency.

**Chemical Family:** Phosphate esters with performance additives.  
**DOT Hazard Class:** This product is not classified as a hazardous material by the U.S. Department of Transportation.  
**Label Requirement:** Product Label  
**Reportable Quantity (RQ)  
Under U.S. Clean Water  
Act Regulations:** Not Listed  
**U.S. Surface Freight  
Classification:** Hydraulic System Fluid, Other Than Petroleum

## WARNING STATEMENTS

CAUTION!  
MAY CAUSE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT

## PRECAUTIONARY MEASURES

Avoid prolonged or repeated skin contact. Wear impervious gloves.  
Do not get in eyes. Wear chemical safety goggles.  
Avoid breathing mist or vapor. Wear a NIOSH approved respirator when mist or vapor is possible.  
Observe all labeled safeguards until container is destroyed. DO NOT REUSE THIS CONTAINER.

## EMERGENCY AND FIRST AID PROCEDURES

FIRST AID: IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Call a physician.  
IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing. Wash clothing before reuse.

## OCCUPATIONAL CONTROL PROCEDURES

**Eye Protection:** Wear chemical safety goggles to prevent eye contact.  
**Skin Protection:** Wear appropriate impervious gloves and protective clothing to prevent skin contact. Wear face shields and aprons when splashing is likely. Launder contaminated clothing and clean protective equipment before re-use.

(Occupational Control Procedures Continued On Next Page)

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MATERIAL SAFETY DATA

SKYDROL® 500B-4 Fluid

## OCCUPATIONAL CONTROL PROCEDURES (Continued)

### Respiratory

#### Protection:

Use NIOSH approved equipment when exposure to mist or aerosols is possible or when working with product at elevated temperature. Consult respirator manufacturer to determine appropriate type equipment for given application.

### Ventilation:

Provide ventilation to minimize exposure. Local exhaust ventilation preferred.

### Airborne

#### Exposure Limits:

No permissible exposure limit or threshold limit value has been established by OSHA or the ACGIH for SKYDROL 500B-4 fire resistant hydraulic fluid, although a constituent of the product does have exposure guidelines.

Tributyl Phosphate (CAS No. 126-73-8)

OSHA PEL/TWA: 5 mg/m<sup>3</sup> (0.4 ppm)

ACGIH TLV®/TWA: 2.5 mg/m<sup>3</sup> (0.2 ppm)

ACGIH TLV/STEL: 5 mg/m<sup>3</sup> (0.4 ppm)

## FIRE PROTECTION INFORMATION

**Auto Ignition Temperature:** 750°F (Min.)

**Method:** ASTM D-2155

**Flash Point:** 320°F (Min.)

**Method:** Cleveland Open Cup

**Fire Point:** 350°F (Min.)

**Method:** Cleveland Open Cup

### Extinguishing Media:

Water spray, foam, dry chemical, CO<sub>2</sub> or other agents suitable for Class B fires.

### Special Firefighters

#### Procedures:

Wear self-contained breathing apparatus when exposed to products of combustion. Wear protective equipment to minimize skin contact.

### Unusual Fire Hazards:

Phosphorus oxide fumes may be produced during fires.

## REACTIVITY DATA

### Stability:

Product is stable under normal conditions of storage and under continued use up to approximately 200-225°F.

### Materials to Avoid:

Exposure to strong oxidizing agents may result in generation of heat and combustion products.

### Hazardous Decomposition

#### Products:

Oxides of phosphorus may form. No other uniquely hazardous decomposition products are expected. If the product is burned, as with any organic material, carbon monoxide and soot can be produced.

### Hazardous Polymerization:

Does not occur.

## PHYSIOLOGICAL EFFECTS SUMMARY

### Human Experience

Repeated contact with SKYDROL 500B-4 fire resistant hydraulic fluid may cause drying or cracking of exposed skin. Eye contact may produce marked pain but does not cause eye damage.

### Animal Data

Oral LD<sub>50</sub> (Rat): 2,200 mg/kg, Slightly Toxic

Dermal LD<sub>50</sub> (Rabbit): >7,940 mg/kg, Practically Nontoxic

Eye Irritation (Rabbit): (FHSA) 2.4 on a scale of 110.0, Slightly Irritating

Skin Irritation (Rabbit): (FHSA) 3.1 on a scale of 8.0, Moderately Irritating

Patch testing of 53 human volunteers with SKYDROL 500B-4 produced no positive reaction following initial application; 16 out of 53 subjects displayed reactions during subsequent exposures. No reaction was observed on rechallenge 2 weeks later. SKYDROL 500B-4 is not considered a primary irritant or a sensitizing agent, but on repeated exposure, may be a cumulative irritant to some individuals.

## PHYSICAL DATA

**Appearance:** Clear, purple, oily liquid

**Boiling Point @ 267 mm Hg  
(Based on Vapor  
Pressure Data):**

~257°F

**Pour Point:** -80°F (Maximum)

**Specific Gravity @ 25/25°C:** 1.052-1.060

**Viscosity @ 100°F:** 11.3-12.10 cs

**Refractive Index, n 25/D:** 1.466 - 1.474

**Note:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

## SPILL, LEAK & DISPOSAL INFORMATION

**Waste Disposal:** Waste should be incinerated or disposed of in a hazardous waste landfill. Either disposal route should be in accordance with all local, state or federal regulations. This material should not be spilled, dumped, rinsed, or washed into sewers or public waterways.

### Spill or Leakage

#### Procedures:

Absorb spilled or leaked material on clay, sawdust, or other absorbent material.

## ADDITIONAL COMMENTS

### Environmental Toxicity Information:

96-hr LC<sub>50</sub> Trout: 2.6 ppm, Moderately Toxic  
96-hr LC<sub>50</sub> Fathead Minnow: 3.0 ppm, Moderately Toxic  
48-hr EC<sub>50</sub> *Daphnia*: 6.5 ppm, Moderately Toxic  
96-hr EC<sub>50</sub> Algae - Cell Count: 8.9 ppm, Moderately Toxic  
96-hr EC<sub>50</sub> Algae - Chlorophyll: 7.1 ppm, Moderately Toxic

Product Qualifies under the following specifications:

BMF 3-11F, Type IV, Class 2, Grade A  
DMS 2014C, Type IV, Class 2  
LAC MS C-34-1224, Type IV  
SAE AS 1241A, Type IV, Class 2

**DATE:** 11/83  
**MSDS NO.:** M00006729

**REVISED:** X

**SUPERSEDES:** 8/79

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

Monsanto Company  
800 North Lindbergh Boulevard  
St. Louis, MO 63167  
314-694-1000

MATERIAL SAFETY DATA

SKYDROL® 500B-4 Fluid

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This form has been approved by the Occupational Safety and Health Administration as "equivalent to" OSHA Form 20.

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